

Index 534-250 Perimeter Wall

Design Criteria

AASHTO LRFD Bridge Design Specifications; Structures Design Guidelines (SDG); Geotechnical Design Manual (GDM)

Design Assumptions and Limitations

Design Assumptions:

Wall heights are a nominal 8 feet above finished grade. Foundations have been designed for loose sand with an uncorrected SPT blow count of N=5 or greater. Clayey soils were investigated and did not control the design.

Precast Option Design Assumptions:

- Wall Panels, as designed, are adequate for all wind zones when installed between posts spaced at 20'-0".
- Post reinforcing and foundation depths are based on 20'-0" post spacing with a maximum wind exposed wall height of 9'-0".
- Auger cast pile foundations were designed in accordance with the **GDM**, Appendix B.

Masonry Option Design Assumptions:

- Walls are designed as a continuous cantilevered wall in accordance with **ACI 530** using Strength Design for a maximum wind exposed wall height of 8'-8" with the top of foundation a minimum of 6" below grade.
- Foundations are designed in accordance with **AASHTO LRFD**, Section 15.

Design Limitations:

See the FDM, 264 for limitations on the applicability of this Index.

Perimeter Walls are not designed for vehicle impact loads. If the walls cannot be placed at the required set back distances or behind traffic railings or guardrail they will not be allowed.

Ensure system is constructible with consideration of overhead clearances (i.e. overhead services, tree canopies, existing overhead structures, etc.) and existing underground services along the entire length of the wall.

- If foundations will be installed on a slope, adjust the standard foundation depths based on the **GDM**.

Plan Content Requirements

Include the "Report of Core Borings" (Soil Information Data) on a separate sheet in the plans.

Fully detail non-standard components in the plans.

Drainage Holes: Locate wall drainage holes based on site requirements. Evaluate the capacity of drainage openings and locate horizontally and vertically to ensure that offsite stormwater inflows are accommodated without increasing offsite stormwater stages for the appropriate regulatory design events. Refer to the ***Drainage Manual*** for additional guidance. Show location, number, spacing and type of drainage holes in the Wall Control Drawings.

Anti-Graffiti Coating: Consider coating all publicly accessible portions of the walls with an anti-graffiti coating; see **SDM** 4.4 for limits of anti-graffiti coatings. When included, tabulate limits of anti-graffiti coatings in the "PERIMETER WALL DATA TABLE". Specify a "sacrificial" or "non-sacrificial" coating system based on District Maintenance recommendations (See Pay Items). Anti-Graffiti Coating shall match the Class 5 Finish color (when required) or be clear when color is not required.

Wall Textures: See **SDG** 1.4.5.

Caps: Include the post cap type in the "PERIMETER WALL DATA TABLE". Use notes to specify color when required.

Prepare Wall Control Drawings containing the following information and include them in the plans. Wall layouts must be usable for both Precast and Masonry Options.

Plan View

- Perimeter Wall Alignment / Location
- Begin/End Wall Stationing and Offsets
- Offset definition; usually from Baseline to Front Face of Wall
- Drainage Hole Locations
- Adjacent overhead or in-ground services
- Limits of sod or seeding/topsoil application
- Where removal of or improvements to organic soils are necessary, show the limits of organic soils and the limits of required improvements in the plans along with removal/improvement methods and method of payment.

Elevation

- Ground Line Elevations
- Top of Wall Elevations
- Bottom of Wall Elevations and Finished Grade Line.
- Step Locations

If the base elevations or wall height requirements change along the length of the project, step bottom and/or top of walls and post/pilaster elevations to maintain the aesthetic qualities while meeting the design criteria requirements.

- o Drainage Holes (Including type)

(1) See wall control drawings.
(2) Specify texture and limits of anti-graffiti coatings in the Table.

1. Wind Speed is 130 MPH.
2. Colors shall be per Federal color Chart, Federal Standard No 595C.
Wall Color #31136, Post/Pilaster Color #23722, Caps Color #23722.
- 3.Coat wall for stations shown in table with sacrificial anti-graffiti coating.
4. Height for Class 5 finish and/or anti-graffiti coating is from finished grade to top of wall (8 feet).
5. Work these Data Tables with Index 534-250.
6. Front Face indicates roadway side of wall. Back Face indicates non-roadway side of wall.